

O. A. C. SPECIALIST PRESENTS INTERESTING REPORT ON EXPERIMENT IN RECLAIMING LANDS

CONSTRUCTION OF DRAINAGE DITCHES BY SLUICING METHOD DECLARED PRACTICAL UNDER SUITABLE CONDITIONS —WORK SECURED THROUGH FARM BUREAU

W. W. Johnston, gives interesting account of Experiments to Reclaim Alkali Tract by drainage accompanied by various soil treatments and cropping plans.

In a letter to the County Agent, W. W. Johnston, Assistant professor of soils at the Oregon Agricultural College, who was assigned to have charge of the cooperative experiments in drainage and alkali removal on the tract which was started last spring near Vale, as a result of Farm Bureau activity in interesting the experiment station in such work, raising funds, etc., the following interesting information is given:

The following is a preliminary report on the building of a farm drainage ditch on the Burrelle ranch near Vale, Oregon. The work of building the drain was done by Mr. Burrelle, the methods being worked out in cooperation with the writer. The drain was built as a part of an experiment conducted by the Oregon Experiment Station in cooperation with local interests for the purpose of determining the best method of reclaiming alkali lands in Malheur County.

Condition of Land to be Drained

The land selected for the experiment and that it was desired to drain is of a type known as "Grease Wood" land. This soil naturally contains a large amount of alkali and in this instance the alkaline condition had been aggravated by poor drainage. The field is situated on the bank of a deep slough and is within a quarter of a mile of the river, being at least 15 feet above the water level of the river. A need for drainage would not usually be expected under these conditions, but an examination of the sub-soil with a soil auger revealed the presence of a series of hard-pan dykes running parallel with the river and in the case of the first one extending to a depth of about 4 feet where it connected with a layer of almost impervious putty like clay, a condition which of course prevented the proper drainage of the land. The remainder of the field was found to be underlaid with streaks of hard-pan running parallel to the first which occurred from 2 1/2 to 5 feet from the surface and varied in thickness from 2 inches to 2 feet. Some places were entirely free from hard-pan. The drain was therefore located so as to cross these hard-pan streaks.

Sluicing

At the suggestion of Mr. C. L. Batchelder, of the Warm Springs Irrigation district and others, it was decided to attempt to remove most of the dirt by sluicing. Since it was considered desirable to have some dirt for refilling, in case tile were to be put in later, and in order to have a good basis for sluicing operations, ditch 2 1/2 feet deep, 5 feet wide at the top, and 3 feet wide at the bottom was built with a Fresno and a groove, 6 inches deep and the width of a slip scraper was made in the bottom in order to confine the water to a narrow channel.

It was first planned to sluice by keeping the water falling with a straight drop of five feet or more and to loosen the dirt by working on the perpendicular surface beneath the falls with a long bar, the idea being that the dirt would be broken off in large pieces which would be further broken up and put into suspension by the force of the falling water. With this end in view 70 feet of the outlet where the ditch crossed a shallow slough, was taken down to grade with scrapers leaving the ditch with a perpendicular drop of about 10 feet. A head of about 3 1/2 second feet of water was then turned in the ditch and a bar, made by welding a sharpened piece of steel on the end of a pipe, was used to pry the dirt loose below the falls. This system was fairly successful but the system that gave the best results and which was finally adopted was to loosen the dirt with a shovel and instead of using the straight drop, the ditch was sluiced back in a series of layers, about 16 inches and about 40 feet long, so that the ditch was taken to grade as the work pro-

gressed.

When hard-pan was encountered it was found necessary to break it up with a pick. Small quantities sluiced were found to sluice out without difficulty but when an extended amount was encountered, the larger particles settled to the bottom and it was necessary to loosen this material up again and to throw some of the larger pieces out by hand. Some of the worst hard-pan layers were removed with a pick and shovel without the aid of the water. Whenever it was possible to break the hard-pan up into small pieces it sluiced out without difficulty.

Costs

The 676 feet of the ditch which is now completed and which averages 11 feet in depth required 353 1/2 hours of man labor 209 1/2 hours of horse labor, or the equivalent of one man working 353 1/2 hours and one horse working 209 1/2 hours. This includes also the labor required for the Fresno work for 200 feet in addition to the amount which is now completed and all the work on the outlet, etc., the cost of which will ultimately be distributed over several hundred more feet of drain. Figuring man labor at 35 cents per hour and horse labor at 12 1/2 cents per hour, the cost of digging the drain would be about \$149.90. Charging all the labor to date to the 676 feet now completed, the cost per foot of drain would be a fraction over 22 cents, and the cost per yard of dirt removed would be approximately 14 cents. This, of course, includes the Fresno work and the pick and shovel work as well as the actual sluicing. The cost of sluicing where no hard-pan was encountered and the dirt washed easily, was approximately 6 cents per yard.

Horse Drawn Tools

A plow was used with some success in loosening the dirt for sluicing but for the short ditch that was made it was found not practicable to go to the expense of rigging up to give this method a thorough trial. It showed considerable promise, however, and would probably work best in a large ditch and for the first few feet.

A cultivator, with the handles set close together was used with marked success. This tool was used for taking out the last dirt after the ditch was practically completed and in the half day it was used the loose dirt was sluiced from the entire length of the drain and a cut of about 6 inches was made in addition. The handles were set close together so that it could be handled in the bottom of the ditch without difficulty and it was fastened by means of a 20 foot cable to the center of a couple of two-by-fours, eighteen feet long, which extended across the ditch. A horse was hitched to each end of the improvised double-tree to haul the cultivator. It was only possible to haul the cultivator down stream for it could not be held in place when going up stream.

There is need for some sort of a tool which will work without having anyone in the ditch to guide it for while the soil on the Burrelle ranch was such that a man could work in the ditch without danger there are a great many places where this would not be the case. Mr. Percy Purvis, who lives near Vale, has developed a tool, patterned after a threshing machine cylinder, but with specially prepared tooth which is designed to meet this requirement. It is expected that this tool will also be successful in breaking up the hard-pan in small enough pieces that it will sluice successfully. Mr. Purvis has not tried it out sufficiently to report definitely on this tool as yet.

While enough work has not been done along this line to warrant general recommendations and there are undoubtedly a great many places where it will not prove successful, the work so far done indicates that where a good head of water is available, there is sufficient fall (12 to 15 feet per mile, or over) and the soil conditions are right, this system of building drainage ditches will save a great deal of money.

PAROLED MEN FARM BIG SUM DURING JUNE

183 Men Released From Penitentiary Paid \$6946 for Their Work in Month—1493 Paroled Since 1911—410 Break Word

Telegram Salem Bureau Salem, Or., July 30.—(Special)—Earnings in legislature endeavor of 183 paroled men from the Oregon penitentiary who were reporting during the month of June aggregate \$6946.24, according to the report of Percy M. Varney, state parole officer, made to the state parole board. This was an average of \$35.77 to the man. At the same time the average earnings of conditionally pardoned men were \$62.44 to the man.

Since the passage of the state parole law in 1911 a total of 1493 prisoners have been paroled from the state prison, and 410 of them, or 27.46 per cent have violated their paroles. Of this number 52.44 per cent violated by committing crime and 47.56 per cent by failure to report.

Crimes By Paroled Men

According to Mr. Varney the crimes committed by paroled men, which have caused them to be returned to prison or to put them in the fugitive status, are usually of minor nature. Really serious crimes that have been committed by these men, however, could be counted on the fingers of one hand, and the offense committed by Luther Gagan at Hood River recently in kidnaping two women and a boy, resulting in the killing of Gagan by a posse, Varney says is the most serious crime that has been committed by

a paroled man. One or two rather sensational cases of forgery and obtaining money by false pretenses are mentioned. Records showing in detail the escapades of the parole violators are not available at the prison.

Up to six months ago, according to the parole officer, 80 per cent of the men on parole were making good. The percentage has been reduced to some extent in recent months because of the prevalence of misdemeanor and crime during the last winter.

Few are Oregonians

The policy of the prison relative to keeping men in the state when they leave the penitentiary is changing for the reason that a very small percentage of them are Oregonians. The records show that some time back when the prison population was 324 only fifty-seven of the prisoners were Oregonians. Now when a man is through his term in the state prison he is encouraged to leave the state.

In writing up the case of any man who is slated to go before the parole board for consideration, the parole officer is required to submit a statement from the judge who presided at his trial and from the district attorney who prosecuted him; also a statement from the man himself.

When Paroles Are Violated

When a paroled man violates his parole by commission of a crime and is returned to the prison he is required by law to serve out the maximum of his old sentence and the minimum of his new sentence before he is eligible again to go before the parole board.

In addition to the regular list of paroled men now reporting to Officer Varney are 128 men who have been paroled from the bench. They also are required to report each



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month. The form of their report is slightly different from that of the men paroled out of prison. The latter must sign a statement showing among other things the conditions of their parole, their monthly earnings and their occupations.

Mr. Varney now has on his list 112 men who have been released from reporting. Of the 1493 who have been paroled since the law became operative in 1911, 758 have been discharged.

Twelve men were paroled during the month of June.

Many Are Discharged



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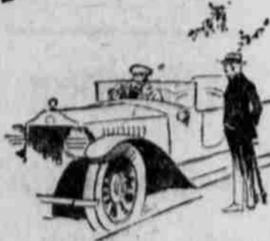
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